News story: Porton Down scientists on brink of titanium revolution

Titanium is as strong as steel and half the weight – but around ten times the cost. It is notoriously difficult and expensive to make which limits its wider use.

Defence Secretary Gavin Williamson said:

> Our Armed Forces use titanium in everything from cutting-edge nuclear submarines and fighter jets through to life-changing replacement limbs – but production time and costs mean we haven't always used it. This ground-breaking method is not only faster and cheaper but could see a huge expansion of titanium parts and equipment throughout the military. It is a clear example of how our world-class scientists are working behind the scenes to help our Armed Forces as well as bringing prosperity and security to Britain.

Titanium's high strength, light weight and corrosion resistance sees it widely used in defence, in military aircraft and submarines, but its high production costs make it difficult to justify in all but essential areas.

Dstl has invested almost £30,000 in the new research project at the University of Sheffield, which led to the development of the new ground-breaking manufacturing process.

The announcement comes as Dstl supports the Defence Procurement Research Technology and Exportability (DPRTE), which takes place tomorrow [MARCH 27].

The pioneer of this revolutionary technique, Dr Nick Weston said:

> FAST-forge is a disruptive technology that enables near net shape components to be produced from powder or particulate in two simple processing steps. Such components have mechanical properties equivalent to forged product. For titanium alloys, FAST-forge will provide a step change in the cost of components, allowing use in automotive applications in automotive applications such as powertrain and suspension systems.

The Defence Science and Technology Laboratory (Dstl) in Porton Down has revolutionised the production of titanium by reducing the 40 stage process down to just two steps and potentially halving the cost. Crown copyright.

So far, small-scale trials have been carried out, but a new large-scale fast furnace facility jointly funded by Dstl and Kennametal Manufacturing (UK) Ltd has been built and will enable larger components to be produced for testing.

Matthew Lunt the Principal Scientist for Materials Science at Dstl said:

> We're really excited about this innovation, which could cut the production cost of titanium parts by up to 50%. With this reduction in cost, we could use titanium in submarines, where corrosion resistance would extend the life, or for light-weight requirements like armoured vehicles.

News story: Royal Navy prepares for future UK fishery patrols

HMS Forth is the first of five state-of-the-art Royal Navy vessels designed

for fishery protection, as well as counter-piracy, anti-smuggling, border patrol, counter terrorism and maritime defence duties.

Defence Secretary Gavin Williamson said:

> The Royal Navy has a proud tradition of protecting the UK's coastline and keeping a close eye on our fishing waters. With these state-of-the-art, vastly capable ships we stand ready to protect our fisheries once Britain leaves the EU.

The River-class Offshore Patrol Vessels (OPV) 'production line' is moving apace with the £116 million ships emerging at around six month intervals. The Royal Navy Fishery Protection Squadron are expecting a further two ships – HMS Medway and Trent – to be handed over later this year, with the remaining two – HMS Tamar and Spey – expected to arrive in Portsmouth by 2020. Just last week HMS Trent was formally named at the Glasgow shipyard where was built.

They will become the Royal Navy's eyes and ears around the UK, helping to safeguard fishing stocks. They will also assist in reassuring and protecting the Falkland Islands and are capable of deploying to the Mediterranean and Caribbean to uphold UK interests around the world.

Last week the Treasury announced that the MOD will receive £12.7 million from the Government's Brexit preparation allocation to support work with DEFRA on maintaining the UK's fisheries. The MOD is working closely with other government departments like DEFRA to determine the optimum deployment of these extremely flexible vessels.

With a total crew of around 58, but designed to go to sea with 39, they can spend up to 320 days a year on operational taskings. The larger crew allows a rotation of personnel to ensure they get to spend time at home or on training.

The new OPVs are four knots faster than their predecessors at 24 knots, have an increased range of 5,500 nautical miles, have a 30mm automatic cannon as their main armament instead of a 20mm gun, two Miniguns, four machine-guns and are equipped with two Pacific 24 sea boats. Each ship has an extended flight deck to operate up to Merlin size helicopters and accommodation for up to 50 embarked Royal Marines for boarding and supporting operations ashore if required.

News story: MDP support Action

Counters Terrorism (ACT) 2018 campaign

The ACT campaign, encourages the public to help the police tackle terrorism and save lives by reporting suspicious behaviour and activity.

With the enduring terrorist threat, it is now more important than ever that everyone, including all Ministry of Defence Police staff, plays their part in tackling terrorism.

Our actions could save lives. Communities defeat terrorism.

Speaking on the campaign T/Chief Constable Andy Adams said:

> The core role of the MDP is the protection of the people and assets at the various Defence and national infrastructure sites where our officers are deployed across the UK. We cannot, however, do this in isolation. We need members of the public and the staff employed at the sites where we are located to report any unusual or suspicious behaviour that they see or hear. No report is a waste of time and any piece of information, no matter how small, could make the difference that enables us to disrupt and prevent a potential terrorist attack.

Like other criminals, terrorists need to plan.

To find out more about what could potentially be terrorist-related suspicious activity or behaviour visit the ACT campaign

If you see or hear something unusual or suspicious trust your instincts and ACT by reporting it in confidence at gov.uk/ACT. If it's an emergency, call 999.

Don't worry about wasting police time. Any piece of information could be important and it is better to be safe and report. No call or click will be ignored. What you tell the police is treated in the strictest confidence and is thoroughly researched by experienced officers before, and if, any police action is taken.

Remember to trust your instincts and ACT: Action Counters Terrorism.

The MDP will be further promoting the ACT campaign on Facebook and Twitter during the coming weeks.

Press release: MOD confirms the death of Corporal Jonathan Bayliss, Royal Air Force Aerobatic Team (The Red Arrows)

Corporal Bayliss was killed when the Hawk T1 aircraft he was flying in crashed at RAF Valley at approximately 1330hrs on Tuesday 20 March 2018.

A Police investigation and a full Service Inquiry into the crash has been initiated. It would be inappropriate to speculate on the causes of the incident at this time.

Sergeant Will Allen, a close colleague of Corporal Jon Bayliss and the leader of the Red Arrows' group of travelling support engineers, known as the Circus, for 2018 said:

> Jon had the ability to motivate and inspire a team and those around him – no matter the rank, role or person. He was so proud to have been chosen to join the Circus team for 2018 and, in being one of the small group of engineers whose job it was to fly in a Red Arrows jet, had fulfilled a schoolboy dream.
>
> Jon had a big a presence on the Squadron and with his wide beaming smile, and dry humour, could lighten up any dull moment or lift

> spirits when needed. Both inside and outside of work, he was a generous, kind and caring man who could also always be relied upon.
>
> Having worked with Jon both at the Red Arrows and elsewhere in the Royal Air Force, I know how tirelessly he approached each task and was, what many would describe, a genuine grafter.

Squadron Leader Richard Bland, Senior Engineering Officer of the Royal Air Force Aerobatic Team, the Red Arrows, said:

> Everyone on the team has a great story about Jon and, without exception, he was known as a top bloke with an infectious smile, cheeky grin and possessing a dry sense of humour that had the ability to fill a room with laughter. At the same time, Jon was the ultimate professional and embodiment of excellence. As the leader of a team responsible for replenishing the jet's dye systems last year, he led exceptionally well, looking after his team mates selflessly and was a true inspiration.
>
> We have been touched by the messages of condolence received from the wider Air Force, from people who knew Jon across ranks and trades and it is clear people loved him. As a skilled leader, ambassador for the Royal Air Force and knowledgeable technician, Jon had all of the attributes and qualities that define the Red Arrows.

Wing Commander Andrew Keith, Officer Commanding, Royal Air Force Aerobatic Team, the Red Arrows said:

> The thoughts of each and every member of the Red Arrows team are with Corporal Jonathan Bayliss' family and friends. He was a dedicated, skilled and experienced Royal Air Force engineer who we will miss deeply. As a highly-trained technician, Corporal Bayliss made a huge contribution to ensuring the Red Arrows' aircraft were able to carry out displays and flypasts to millions of people across the globe and I know how proud he was to be part of that team effort.
>
> Corporal Bayliss was a popular colleague and someone whom others looked up to, being able to draw inspiration from his knowledge and strength of character. The Red Arrows family is a close one – the Squadron is a small team who live and work side-by-side and the overwhelming number of condolence messages, received from around the world, have been enormously comforting to us all and we are very grateful for that.

Air Vice-Marshal Warren James CBE, Air Officer Commanding (AOC) 22 Group – of which the Royal Air Force Aerobatic Team is part of – said:

> Our heartfelt condolences go to Corporal Jonathan Bayliss' partner and family at what is a terrible, tragic time. His death has understandably come as a great shock to his colleagues and fellow team mates at the Red Arrows. The incident is a reminder of the risk present with all types of flying but also of the hard work and commitment shared by both air and ground crews alike.
>
> All of our thoughts are now with Corporal Bayliss' family, friends and his colleagues as they try to come to terms with his loss and investigations take place into establishing what happened.

Defence Secretary Gavin Williamson said:

> It is with deep sadness that I heard of the death of Corporal Jonathan Bayliss whilst flying with the Red Arrows on Anglesey. It's clear from his colleagues that he was an incredibly skilled engineer and held in the highest regard as a teammate, a friend, and a shining example of what the British Armed Forces stand for. Our thoughts and prayers are with his family and loved ones at this terrible time.

Corporal Jonathan Bayliss, 41, was an Aircraft Technician (Mechanic) with the Royal Air Force Aerobatic Team.

He was born in Dartford, Kent and grew up in Hartley. He attended Axton Chase School in Longfield and studied at West Kent College before going on to complete a HND in engineering management at the University of Greenwich.

Before joining the Royal Air Force in 2001, he worked at Brands Hatch motor racing circuit.

Prior to becoming a member of the Red Arrows team in January 2016, Corporal Bayliss' Royal Air Force career involved working on squadrons at RAF Coltishall and RAF Coningsby as well as on overseas deployments.

As a mechanical engineer with the Red Arrows, he had supported successful tours to the Far East, including China, as well as the Middle East and mainland Europe.

In 2017 he was a leader of the Red Arrows' dye team, helping to replenish the jets' famous smoke systems wherever they landed.

For 2018, he had been selected to be one of the Circus team – the small group of highly-trained engineers who travel with the aircraft and provide technical support to the Red Arrows when the aircraft operate away from their home base.

Corporal Jonathan Bayliss

News story: Multi-million-pound contract to enhance Royal Navy Type 45 fleet resilience

The Power Improvement Project (PIP) will enhance the resilience of the Type 45 class by installing additional power generation sources in each ship. Delivered as a major conversion project, the PIP will replace the two existing generators with three larger units capable of delivering the ships propulsion.

The contract has been awarded to BAE Systems, in collaboration with BMT Defence services and Cammell Laird. The physical conversion work will be conducted at Cammell Laird's ship yard in Birkenhead, Merseyside, sustaining more than 100 highly skilled jobs.

The PIP contract covers the design and integration of the technical solution, supply of equipment and physical installation into all six Type 45 destroyers.

The contract forms part of Project Napier which was established in 2014 and

builds on the work carried out in the first strand of the project, known as the Equipment Improvement Plan which addresses the reliability of existing equipment.

Director Ships Support at the MOD’s Defence Equipment and Support organisation, Neal Lawson said:

> This contract demonstrates our ability to collaborate effectively with industry and I am extremely pleased with how the team at DE&S have worked rapidly to meet requirements.
>
> The PIP will ensure the fleet of highly sophisticated Type 45s can continue to be deployed successfully on operations around the globe, protecting the UK’s interests worldwide.

The Power Improvement Project demonstrates how the MOD is delivering on the commitment as outlined in the last Strategic Defence and Security Review, to provide a robust solution to the power and propulsion issues observed in Type 45.

The first of class conversion is expected to complete in 2021, with follow on ships completed during the early 2020s. The programme is dependent on the availability of ships to undertake the conversion, balanced against the Royal Navy’s standing and future operational commitments.